

Solar Terrestrial Probes Program Overview:

The scientific missions in the Solar Terrestrial Probes (STP) Program obtain information to respond to the two quests or goals of the strategic science and technology roadmap for the Sun-Earth Connection (SEC) theme:

1. How and why does the Sun vary?
2. How do the Earth and planets respond?

The coordinated sequence of projects within the STP Program responds to these quests by focusing on the study of the Sun and Earth as an integrated system.

Primary Objectives:

1. To manage and execute a series of SEC community - defined strategic projects.
2. To accomplish high-quality space science investigations utilizing innovative, streamlined, and efficient management approaches.
3. To enhance public awareness of, and appreciation for, space science and to incorporate educational and public outreach activities.
4. To identify, develop, infuse, and transfer technologies that enable or enhance opportunities for frequent scientific investigations.

Scientific Objectives:

The science objectives are directly tied to the quests in the SEC theme and each mission responds to at least one of them:

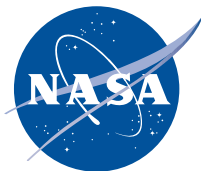
1. To describe the system behavior of the magnetic variable star, our Sun, and its interaction with the entire solar system.
2. To understand the critical physics that link the Sun, Earth, and the interstellar medium.
3. To understand the boundary processes and dynamics of geospace, the electrical-plasma environment between the Sun and the Earth.

For more information about Solar Terrestrial Probes, see:

- NASA-GSFC Solar Terrestrial Probes website at: <http://stp.gsfc.nasa.gov>
- NASA-GSFC Sun-Earth Connection website at: <http://umbra.nascom.nasa.gov/spd/>
- Sun-Earth Connection Science Roadmap website at: <http://umbra.nascom.nasa.gov/spd/secr>
- NASA HQ Office of Space Science website at: <http://spacescience.nasa.gov/>
- NASA HQ Office of Space Science Sun-Earth Connection website at: <http://spacescience.nasa.gov/sec/>
- Sun-Earth Connection education forum website at: <http://sunearth.gsfc.nasa.gov/>

The STP Team at NASA-GSFC

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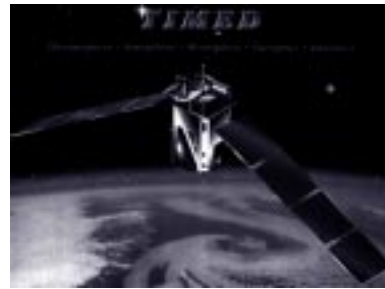
National Aeronautics and
Space Administration

Goddard Space Flight Center
Greenbelt, MD



What are Solar Terrestrial Probes?

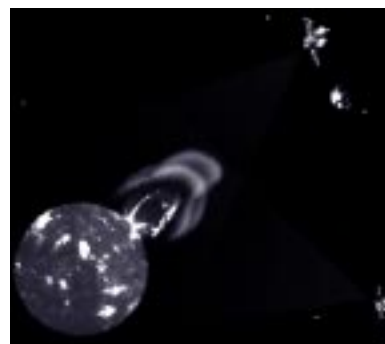
- A continuous sequence of flexible, cost-capped missions designed for the sustained study of the Sun-Earth system.
- A creative blend of in situ and remote sensing observations, from multiple platforms, addressing focused science objectives.
- Stimulators of advanced technology for the Sun-Earth Connection and other science missions.



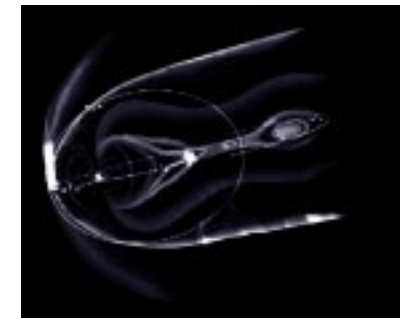
TIMED: Exploring the energetics and dynamics of the Earth's upper atmosphere
(1 spacecraft)



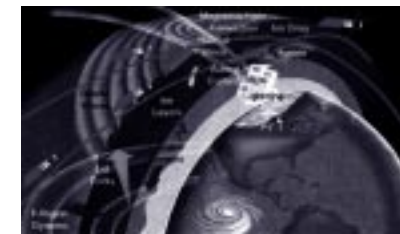
Solar-B: A joint mission with Institute of Space and Astronautical Sciences to reveal the mechanisms of solar variability.
(1 spacecraft)



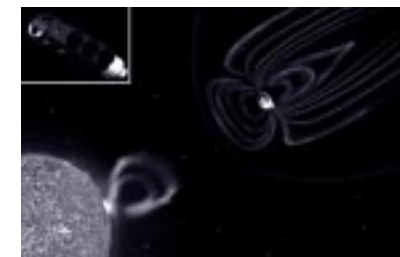
STEREO: Providing revolutionary views of the Sun-Earth system to reveal the 3-D structure of coronal mass ejections.
(2 spacecraft)



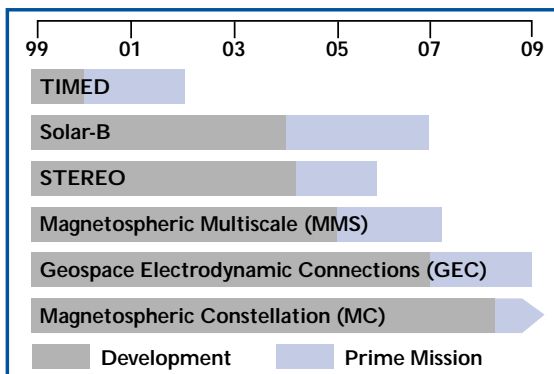
Magnetospheric Multiscale: Investigating magnetospheric plasma boundaries and their response to solar mass ejections.
(5 spacecraft)



Geospace Electrodynamic Connections: Unraveling the role of the ionosphere in controlling the electrodynamic environment in near-Earth space using multiple, deep-dipping satellites.
(4 spacecraft)



Magnetospheric Constellation: Flying tens to hundreds of nano-satellites in a constellation to make multiple remote and in situ measurements in space.



Strategic Launch Sequence

...Because the STP Program is an ongoing program, definition of the sequence and content of additional missions will occur in the future based upon the Sun-Earth Connection Strategic Plan.